1: Radcliffe-Brown E-5 (1906-1908)1922
AZ2 Andamans AZ2

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An Andaman Islander shooting fish with bow and arrow on the reefs at Port Blair

Frontispiece

1: Radcliffe-Brown E-5 (1906-1908)1922
AZ2 Andamans AZ2

A comparison of the three branches of the Negrito race in the light of present information shows that the usual form of habitation amongst them is a sloping roof or screen of palm-leaves. One form of this, the simplest to construct, but only suitable as a temporary shelter, is in common use amongst the Semang and is found amongst the Negritos of Casiguran. The other form, more permanent but requiring more labour to erect, is in common use in the Andamans and amongst the Negritos of Zambales. Of communal huts we have no evidence in the Philippines. The communal shelter of the Semang consists of two screens leaning towards one another. The two types of communal hut of the Andamans are both derived from the family hut.

HUNTING, FISHING, ETC.

The Andaman Islanders depend for their subsistence entirely upon the natural productions of the forest and the sea. They make no attempt whatever to cultivate the soil. Until the introduction of dogs in 1858 they had no domestic animals. Young pigs are occasionally kept in captivity till they are grown, but they are killed for food and are not bred in captivity. Thus the Andamanese provide themselves with food by three different forms of activity: (1) collecting such things as roots and fruits and honey, (2) fishing in the sea and in the creeks, (3) hunting the wild animals of the forest.

For hunting the Andamanese rely entirely on the bow and arrow. Since they have had dogs they occasionally make hunting spears, but they did not do so in former times. They make no use whatever of any method of trapping game or birds. For fishing they also make use of the bow and arrow, wading out on to the reefs and shooting the fish, and in this they are very skilful. Crustaceans, such as crabs and cray-fish, are captured in the same way. In the North Andaman a sort of short fish spear was formerly in use as an occasional substitute for the bow and arrow. In all parts of the islands small nets are used by the women for catching small fish and prawns. In the Great Andaman large nets were formerly used for capturing turtle, dugong and large fish near the shore. At the present time the natives of the Great Andaman Division make use of harpoons with which they capture turtle, dugong and large fish from their canoes. Harpoons are not used in the Little Andaman. The Andamanese are also aware of methods of poisoning or stupefying fish in pools by means of certain plants that they crush and place in the water, but I have never seen them use this method of

1: Radcliffe-Brown E-5 (1906-1908)1922
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227 fishing, although they say that they formerly did so. They have no
226 fish hooks and no fish traps. At the present time a few of the natives have learnt to take fish with hook and line, but they are unable to make hooks for themselves, and have to obtain them from the Settlement at Port Blair.

222 In collecting roots a digging stick is used, and a hooked pole is
412 used for gathering fruit, but they have no other special implements in use in collecting natural productions, and have no need of any. The adze is used for obtaining molluscs and for cutting honey-combs from hollow trees.

411 It is thus clear that by far the most important utensil of the Andamanese is the bow and arrow. We may say that they are essentially a bow and arrow people. This is even more true of the natives of the Little Andaman Division than of those of the Great Andaman Division.

It may be noted here that the Andamanese have no weapons that are used only for fighting. They fight with their chief hunting weapon, the bow and arrow. Nor have they any special defensive weapons, the shield being unknown.

171 The Semang in their natural condition depend for their subsistence on collecting roots and fruits from the forest, on catching fish in the streams, and on hunting animals. Their mode of subsistence is thus essentially the same as that of the Andamanese. One difference is that they have not the sea from which to draw supplies, and another is that the forests in which they live afford a much larger variety of game. A number of the Semang now practice a little rude agriculture which they have undoubtedly adopted in imitation of their neighbours of other races[1].

The principal weapon of the Semang, as of the Andamanese, is the bow and arrow. In hunting they also use spears[2], thus showing a difference from the Andamanese. Some of the Semang make use of the blow-pipe with poisoned darts, but it is practically certain that they have adopted the use of this weapon from their neighbours the Sakai[3]. They also make use to some extent of traps with which to capture jungle animals and birds. The wilder Semang living in the mountains have little opportunity of obtaining fish. Those of them that dwell near rivers use fish-spears and harpoons for catching large fish, and a small basket-work scoop for catching small fry[4]. They also fish with

[1] Skeat, p. 341. [2] Skeat, p. 270.
[3] Skeat, p. 280. [4] Skeat, p. 305.

2:Man G-5 (1869-1880)1932 AZ2 Andamans AZ2

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PLATE IX.

SHOOTING FISH IN TIDAL CREEK NEAR PORT BLAIR.

[Facing p. 146]

2:Man G-5 (1869-1880)1932 AZ2 Andamans AZ2

226 receding waves in the rocky hollows on the foreshore, and at the turn of the tide the men are usually to be seen standing up to their waists in water, or poling along the shore in their canoes, and shooting with their bows and arrows at the fish as they dart past.[1]

[824] 40. The seeds of a plant called *tō·rog-*[2] are sometimes crushed and thrown into creeks where fish and prawns are likely to be, as it has the effect of driving the fish from their hiding place, and leads to their easy capture in hand-nets held in position for the purpose.

41. In former times, and even now in the more distant communities, large nets of about 80 feet in length and 15 feet in depth, with meshes of several inches in diameter, were spread at the mouths of creeks for catching turtles and big fish; but since iron has been so easily obtained and canoes and harpoons have become more numerous, the *dryō·to-* usually capture their turtles, &c., by these means in preference to the older method, which entailed much labour in the manufacture. The following is the mode employed when nets are used:—one side is sunk by means of stones, and the other is kept up by floating sticks called *t'ā·lag-*, of the *al·aba-*[3] tree (*Melochia velutina*), to each of which a cane-leaf is attached; the ends are then drawn across such parts or creeks into which fish may easily be driven by beating the water with the bamboo shafts of their turtle spears. When any turtle or fish is driven into the net, the exact spot is at once indicated by the disturbance of one of the logs, with its tuft of leaves, whereupon they generally find little difficulty in despatching their captive.

502 **Navigation.**—1. It is a subject of surprise to all who, during the past fifteen or twenty years, have come in contact with the Andamanese, and have observed the style and capabilities of their canoes, to read the high encomiums that have been bestowed on the skill with which they are constructed, and to find that they are credited with such extraordinary speed as to distance easily a cutter, as well as a gig, manned respectively by picked crews of blue-jackets and Chinamen,[4] the former of whom "said, in their own usual exaggerated style of remark, they nearly killed

[1] The results obtained by the men are said to be inferior to those obtained by the women and children, but this is probably due to the large quantity of molluscs and crustaceans usually collected in the hand-nets.

[2] A species of *Lagerstræmia*. This is similar to the custom among the Gaboon tribes described by Dr. Brown, who mentions that "at the Gaboon it is the leaves of a pretty leguminous plant, with yellow flowers . . . which is used. So rapid is the poison that if a handful of the bruised leaves are thrown into a pool the fish will almost immediately die and come to the surface."

[3] *Vide ante* "Superstitions," paragraph 7, and *post* "String," paragraph 1.

[4] *Vide* Mouat, pp. 315-321.

6: Cipriani E-5 (1951-1953)1961 AZ2 Andamans AZ2
Onge

515 people. Furthermore, the Onge skin is very soft and more elastic than is usual
[147] in human beings. For us, clothed and with a less resilient skin, a trip through the thorny Andaman forest means many small, bleeding scratches. Not so for the naked Onge. – To cover them with clothes would endanger their health. Nakedness inures them to the sudden changes of temperature so frequent in
[513] Little Andaman and preserves them from catching cold when sleeping, uncovered, on their rough, unprotected bed of boughs. As with primitives all over the world, clothes make them miserable and, I may add, very ungainly and dirty.

515 Part of their general negligence with regard to hygiene is their careless-
[413] ness about their teeth. They never clean them. They do keep bamboo sticks, 1 mm thick and 8 cms long, tucked into their hair to be ostensibly used as toothpicks ; but the sticks, to tell the truth, are more of an ornament than a tool.
142 The Onge's teeth are so compact and sound that there is no space between
[164] them for food particles to collect. No caries or decay of any sort are to be noticed. In a number of skeletons that I dug up from under the beds in communal huts, the teeth gave evidence of one peculiarity : old people had worn
[283] them down to the root. The Onge habit of using teeth as working instruments, to prepare fibre for ropes and in many other circumstances – apart from their permanent chewing on hard foodstuffs – explains this fact.

515 As a consequence of never washing, the natives' hands are sometimes
226 extremely dirty. The Onge themselves are conscious of this. I shall give an instance. It so happened that I arrived in Nachugé, on the west coast, toward the end of March, when the sea was teeming with migrating sardines. In Little Andaman sardines can weigh up to a pound ; but a normal catch, obtained with small hand-nets cast from canoes among shoals of fish imprisoned by the low tide within the coral reef that surrounds the island, contains specimens of
[264] every dimension. All are eaten as soon as possible. The quantity of fish brought back to the camps on such occasions puts all inmates to work and induces everybody to abandon all other occupations for the time being. In the low tidal waters the men push their canoes from rock to rock, using them as receptacles for the abundant food so easily collected. In some "pockets" nets prove unnecessary : the fish is gathered in handfuls and rapidly thrown into the canoes. The hecatomb ends when the canoes are filled to the gunwales. In no other part of the world have I seen food made available to primitive people in such large quantities and with so little effort.

252 Back at the camp, the sardines are "graded" according to size and cooked immediately. They are not washed or cleaned, the inner organs are eaten to-
[263] gether with the flesh. Men, women and children feverishly take part in the cooking ; the fish is boiled without salt. All the natives then plunge their hands
264 avidly into the heap of sardines. From time to time the women clean their
515 hands by rubbing them on the *naquinēghē*. Very soon this garment becomes
[231] extremely smelly. Men and children clean their hands in a different way : by rubbing them on the dogs. On such occasions, everything and everybody smells of fish for days and days. The first to become clean again are the dogs, because they hate to be smeared with fish and wash themselves in the sea as soon as they have a chance.

6: Cipriani E-5 (1951-1953)1961 AZ2 Andamans AZ2
Onge

3. Food

In the absence of men, women also are good at fishing inside the coral reefs. They do this with two small nets used together. Their catch generally consists of brilliantly coloured fish with yellow, red, green, blue, black and white stripes forming varied and attractive designs. The Onge eat all fish without discrimination. My Indian collaborators, on the other hand, considered the coloured fish dangerous to their health and refused to cook them ; the Sacred Vedas, in fact, advise the avoidance of brigthly hued fish and of fish without scales. I wanted to try both kinds, and found them perfectly palatable, tasty and harmless.

No tool, used for any purpose by the Onge, ever gets a cleaning. Cleanliness, I repeat, is unknown in Little Andaman. See how food is prepared and disposed of ! Care is taken only not to throw big pieces of meat intended for cooking directly on the bare ground ; but once it is cooked, food is treated with the utmost disregard for dirt, dust, cobwebs and other such things. It is usually left lying around on large leaves spread out for the purpose. The remains of the Onge's orgiastic meals are kept out of reach of the dogs on the ceiling of the huts, to be covered with flies when no fire is lit directly below. Sand and grit may get wedged annoyingly in the teeth, but not such impalpable things as dust or cobwebs. The use of unclean food is not repugnant to the Onge. The same can be said for water polluted by dogs drinking and bathing in it, or by the presence of putrefying carcases. In the west of Little Andaman I saw some Onge avidly drinking from pools of a blackish water with a revolting sulphurous smell. After thoroughly filtering and boiling it, I too used such water, for it was the only water available in the neighborhood. This caused no ill effects. My Indian men considered it perfectly healthy and invigorating, and drank it safely in its natural condition.

The Onge eat with their unwashed fingers, without the help of tools. On rare occasions they use platters made of the flattened-out stems – or bracts – of *areca* palms. They sometimes carry these platters when travelling, but of course never wash them although they become coated in rancid, greasy filth. They soon assume a dark colour and a truly revolting appearance – aside from the awful smell. A. R. RADCLIFFE-BROWN's statement – that the Andamanese paint their bodies to neutralize the unpleasant smell of food that clings to them after their orgiastic feedings – shows only indirect knowledge of the life and manners of those people. Even the horrible flatulence that follows their pork orgies is not considered an inconvenience ; yet it is much more revolting than all the other body odours.

Although the Onge observe few hygienic precautions they do follow a number of medical practices, not all devoid of beneficial effects. Here are a few more remarks on their eating and drinking habits. For about six months of the year, between November and April, water is scarce in Little Andaman. Every kind of fresh water is then considered good by the Onge, regardless of whether it is a murky infusion of rotting leaves or afloat with the putrefied

10: Sen K-3, 4 (ca. 1955) 1962 AZ2 Andamans AZ2

simultaneously with it a successful all-round regional development of the islands.

The resources of the islands having a small areal extent are very limited though the forest and sea products are fairly rich to deserve special mention. The presence of a variety of valuable species of timber in these islands has led to their exploitation since the development of the Penal settlement. The important species of timber found in the Andaman forests are padauk, garjan etc. In the previous decades, the forest exploitation was never associated with a commensurate amount of forest regeneration. Such policies are being followed at present for saving the forest resources from ruthless exploitation without any adequate means of ensuring a perennial supply of timber by systematic regeneration. The recent colonisation scheme has invoked the enquiry for the clearance of the forests. Andaman forests being rich in timber and also being the only major revenue earning source of the islands should by no means be ruthlessly cleared for settlement. Not only it depletes the forest resources but also degenerates the soil—the soil erosion being the immediate victim after such clearance of forests. Considering the primary importance of the forest resources of the islands, it seems to be a plausible agreement that at least 50% of the land should be reserved under forest cover and a further curtailment from this percentage will undoubtedly lead to serious consequences of the soil simultaneously with a great decrease in the resources of the islands.

The sea products range from a wide variety of products from sea shells to sea fisheries. The collection of sea shells is in vogue from a fairly long time and the sea fisheries, mostly being confined to the coastal areas, is conducted by the fishermen and the tribal people for their own consumption. There is a good deal of possibility for furthering the development of marine fisheries on a commercial scale but the lack of enterprise and capital investment has not given rise to any appreciable development. The only two enterprises of the fisheries are those of Trochus and Turbo shells by the Japanese during 1930-36 and another enterprise by a business concern in 1947. Even the present catch from the coastal areas amount to only 300 lbs., a considerable lag from the demand within the islands.

The means of earning livelihood in the islands were hunting and collecting by the aboriginal population who have not even to-day learnt the techniques of domesticating plants and also animals except the Onges who have domesticated the dogs very recently. The penal settlement and the subsequent expansion of the administrative seat at Port Blair

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9 The bow and arrow is the main weapon used for hunting; in this photograph the archer has the long arrow harpoon used for spearing large fish

10 Fishing in the coral shallows

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[facing P. 66, G]

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2

133 to six metres or more, with sudden vertical drops and dangerous overhangs. It is here, however, that underwater life is at its most
133 beautiful. Swarms of fish, painted in fantastic variegated stripes,
136 spots and patches in imitation of their surroundings, live among these caverns, rushing about in the wells of deep water. When they are pursued by bigger fish, the shoals will leap suddenly out of the water, only to be caught by the gulls who are always lying in wait for them. I have watched the shoals from the shore, and seen them leap out of the sea to lie gasping on the sand, dying quickly in the heat.

136 Where there are channels in direct communication with the open sea, small sharks slightly over a metre in length move in to meet any swimmers, though a clap of the hands is enough to put them to flight. Fish weighing several kilograms hide in the recesses of the
● [226] rocks bordering the corals, but they quickly emerge if poked with a stick, and the Onge women have an ingenious system of catching them. Rocks sticking up out of the water swarm with crustacea and tiny molluscs. Apart from the crabs, I was struck by their poor relations, the hermit crabs, comical tenants of all kinds of shells. One species, common in Little Andaman but rare on Great Andaman, is a beautiful tomato red all over, while others are bluish or grey.

The underwater world round the islands is completed by large numbers of several Holothuria, lazy, but conspicuous, and the huge bivalve molusc, *Tridacna* or Giant Clam. Some of these are anything up to a hundred years old and well over a metre in diameter, and weigh between two and three hundredweight. Always open, and incapable of moving from place to place, they feed by means of a multicoloured 'fringe' attached to the hem of each shell, the beating cilia which wave unceasingly causing eddies in the surrounding water and so drawing in plankton from a wide radius. Under normally calm conditions, this process of drawing in and swallowing plankton goes on without stopping, day and night. The huge molluscs look like simple baskets of blue, red, green and white flowers set on the sea bed, but they are in fact terrible creatures. If a man's hand or a foot should be sucked into the quite strong eddy the 'fringe' of cilia immediately folds back and the *Tridacna* suddenly closes like a giant eye silently, viciously, and so violently as to crush completely the limb caught between the two

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2

136 *fortispine*, uses a similar action on the larger bivalves. Its shell is equipped with a very effective form of tin-opener, which it keeps polished by vigorous rubbing.)

I watched a *Pterocera* attentively scrutinizing the hand holding it. After exploring it very carefully, the creature tried to free itself by beating violently with its foot, causing considerable pain. I held one by one of its protuberances, which was like a large right-angled hook. Suddenly, while my attention was held by a shoal of fish, I felt a sharp pain on the back of my hand. Taken by surprise, I watched the creature to try and discover what it had done. From a furrow at the base of one large front hook, a little to its left, I saw a tentacle emerge, able to turn in any direction, with a retractable eye at its tip. The eye, after a few exploratory movements, fixed its gaze on the place on my hand the creature intended to hit, and then the foot began to beat wildly on my hand, time and time again, causing a quite surprising degree of pain.

462 226 224 It is during the honey feasts, when the tides are exceptionally low and the seas calm, that the womenfolk come into prominence. While the men normally do all the hunting for game and large fish, using arrows and harpoons, the women, with their nets, catch the smaller fish in the rivers and marshes, and among the coral reefs at low tide. Their contribution to the everyday diet is by no means negligible, and during the season of very low tides their daily haul is tremendous.

262 825 The importance of fish to the Onges is shown by the fact that their word for it, *cioghe*, is also used to mean food in general, and clearly dates back to the time before the arrival of the pigs on the island, when fish and sea food in general was the basis of their diet.

[251] So plentiful is it that even at the height of the season the most they do in the way of preserving anything for future use is to expose the fish to smoke in order to deter flies from laying eggs on it for a day or two.

462 226 Only on very rare occasions do the men help in the net-fishing, and then only when they can completely fill the canoes with fish very quickly. I saw it happen for the first time on 24 March 1953, in the great coral reef near Nachuge, just as it happens all over the island at this time of year, when the pilchard shoals are so far inshore that there are not enough canoes to hold the catch. As the

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2

tide goes down, the shoals are caught in the reefs stretching out to sea all round the island and the Onges leave everything to manhandle the canoes from pool to pool and fill them to overflowing. The water is almost saturated with fish, and the Onges go on and on until they have nothing more they can use to hold the catch. Nowhere else in the world have I seen anything like this wholesale slaughter.

The pilchards of the Andamans are rather larger than usual, some weighing as much as half a kilogram or more. The Onges catch them regardless of size and then sort them into lengths before cooking (cooking, needless to say, without stopping to gut them). Men, women and children work feverishly, plunging their hands into the heaving mass of fish so that they reek of it for days, together with the dogs, whose coats become the inevitable handtowels.

Every available vessel is used for the cooking, and the rest of the haul is cooked directly over hot ashes. The biggest are cooked alone; the smaller ones, in batches of half to one kilogram, are wrapped in big fleshy leaves, tied up with vegetable fibres and cooked for ten minutes or so, turned regularly all the while. To boil the fish, an entire netful of fish roughly equal in size is plunged into boiling water, and boiled as usual far too long for our taste.

Everyone cooks and eats at the same time until (temporarily) unable to eat any more, when the rest of the haul is laid on improvised racks with fires of green wood making smoke underneath. When, a few days later, all is gone, fishing begins again. And so life goes on for weeks, until the shoals have passed the islands.

The real fishing, however, is done by the men. The women use small nets about fifty centimetres in diameter, and about the same depth. The opening consists of a pliable cane, barely three centimetres in diameter, bent into a circle and tied with the ends crossing each other and projecting about twenty centimetres to form the handles. Each woman handles two nets, one held between the legs and the other in one hand, while the other hand pokes with a stick into the crevices in the reefs under the water to drive out the fish which have taken refuge as the tide goes out. Once found the fish are killed – very simply, by biting them between the

eyes to crack their skulls – and thrown into the small basket every woman carries on her back, hung from the usual cord round her forehead.

The fish the women catch are all the varicoloured species which always haunt the coral shallows, bright red, blue, green, black and white in a wonderful range of stripes and patterns. The Onges eat them with no respect for design, and I must confess that I myself found them very good.

Besides fish, the women catch molluscs, crustacea, lobsters, crayfish, crabs and even some species of hermit crabs (the latter are baked alive in their adopted shells, and only the abdomen is edible). Lobsters are plentiful, some striped with green and blue and weighing up to half a kilogram, with a very delicate flavour, but the Onges do not seem to be greatly interested in them. They prefer fish and crabs; *Pterocera*, again baked alive, are great favourites and I quite saw why the kitchen-middens are full of *Pterocera* shells.

The men prefer to fish with bows and arrows made specially for the purpose, and very different from those intended for game, the shaft being made of very light hollow cane, instead of the solid wood demanded by the mechanics of the game-arrow. The fishing arrow is made of three parts, bound tightly into one. The point, now made of iron,[1] is about four to five millimetres in diameter and twenty to twenty-five centimetres long. Like that of the arrow harpoon, it is fixed by a tightly bound thread to a small stick or foreshaft about fifteen to twenty centimetres long and slightly smaller in diameter than the shaft proper (usually eighty to eighty-five centimetres long), so that the overall length of the finished arrow is a hundred and ten centimetres or more. The binding threads are held fast by a mixture of resin and beeswax, coloured with ochre in the case of new arrows.

I tried giving the Onges hooks and lines; they were intrigued by my demonstration of how to leave lines overnight and draw them in next morning loaded with fish, but no more. This was not superstition or fear of the unknown but sheer adherence to established custom. They have neither incantations, amulets nor propitiating

[1] Formerly made of *Tridacna*, or very hard wood. Some of the latter are still to be found, but all the other types of head – fish quills, bone, and *Tridacna* – have disappeared long ago.

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2

136 [222] many smaller ones, all good to eat. Near my base camp at Labanar, the men caught sackfuls of them, and I found young ones near the communal hut at Togalanghe.

There a rocky path winds down to the banks of the river Tciongarè (or Chongaree) to the south of the camp. In various places, where the path levels out, black muddy water collects into pools full of rotting leaves, lying on a bed of ooze and slime. In these pools, which appear and dry up again very quickly, I was surprised to catch a number of *silurides*. When it rains heavily, however, the pools link and join up with the river where the fish live, so that as the water disappears again any fish which have entered the pools are prevented from returning to the river, and are left lying in the slime as the water evaporates. These silurides have no gills, and are equipped instead with nostrils of an unusual type; from the nostrils protrude two cylindrical tubes, half a centimetre long in fish fifteen centimetres long, the same blackish colour as the rest of the body. The tail and the long dorsal fin are yellowish, and the long ventral fin running from the anus to the tail is whitish. There are two large lateral pectoral fins, with two very small ones between them. The eyes are large, starting out of the head like tiny glass domes. Very unfortunately a number of specimens which I had most carefully preserved were lost in transit from Port Blair to Calcutta, when some of my baggage, including the crabs and a collection of face masks of Nicobarese which had cost me a great deal of trouble, mysteriously disappeared *en route*.

136 262 226 The Onges do not eat eels,[1] which they regard as snakes, but they several times brought me examples of a very fine freshwater eel whose presence on Little Andaman I had not suspected. The Onges caught them, as they do all fish, with their bows and arrows. All weighed over half a kilogram and looked and tasted like European eels.

136 The eel of the Andamans, like those of Europe and America, has a long, almost cylindrical body and a single fin which begins on the back, circles the tail, and ends under the body just in front of the anus. There is also a pair of strong pectoral fins. The head distinguishes it from other eels, its rounded snout and wide mouth being

[184] [1] The Arioto, however, eat eels, and also mice and other small animals, although food is given to them by the Governor in return for police duties. Brown also refers to the eating of snakes and mice on Great Andaman.

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2

rather shorter than in other species, with rows of small teeth covering the palate. The jaws themselves, however, have only one row of teeth, all very pointed. To my intense annoyance, my eel specimens were lost with the silurides. 136

On rare occasions the Onges manage to catch the toad fish of the mangrove swamps. These curious little animals are apparently a compromise between the fish and the frog; they can breathe both in the air and under water and like to come out of the water to take a walk. They wriggle about in the pools left by the ebb tide, popping out into the air as soon as they meet anything suspicious, and hopping away over quite considerable distances. But normally they wander peacefully about on the mud, propelling themselves with their two pectoral fins, which are attached to the end of a form of arm. In size (never over twenty centimetres long) and colour they remind one of the gudgeon, to which they are related. They belong to the genus *Periophthalmus*, of the order Gobiidi. They seem to prefer living in the open rather than in the water, and appear to look forward to low tide, when the tiny creatures on which they feed are about. Hunger satisfied, they cling to some stone or tree-trunk, often in an almost vertical position, and will stay there over half an hour, particularly if their tail is touching the water, as this keeps their body damp and helps them to breathe by means of ingenious gill sacs filled with air. [226]

Toad fish move into the marshes as the sea recedes and move back as the tide returns. In the middle of the day they seek the shade in the damp crevices of the mangrove swamps. They seem to glory in the first rays of the morning sun, their huge erectile eyes, which never rest, moving endlessly from side to side. Their independent movement enables the creature to gaze at the sun with one eye and look for likely prey with the other. The two eyes, set closely together on top of their flat heads make them look rather ridiculous. Another striking feature about them is a kind of sucker, or adhesive disc, formed by the ventral thoracic fins. These have a loose fold of skin on the back, so that when the fins are brought together in front of the body, the skin falls into a funnel shape, which when pressed against a stone or tree-trunk adheres to it by suction, holding the animal fast.

I was amused by the way toad fish can be domesticated as soon as they are caught. I kept some in my tent, leaving water available [126]